

IN THE CLAIMS

This listing of claims replaces all prior versions and listings of the claims in the above-referenced application.

1. (Currently Amended) A structure comprising:

a semiconductor light emitting device; and

a substrate comprising a ceramic core and at least one copper layer overlying the core,

the at least one copper layer having a thickness of at least 4 mils;

wherein the semiconductor light emitting device is electrically connected to the at least one copper layer and wherein ~~a path from the at least one copper layer to the ceramic core is thermally conductive~~ the substrate is configured to have a thermal conductivity of at least 24 W/m·K.
2. (Original) The structure of claim 1 wherein the semiconductor light emitting device comprises a III-nitride light emitting layer.
3. (Previously Presented) The structure of claim 1 wherein the core comprises a material selected from the group of Al₂O₃, AlN, alumina, and silicon nitride.
4. (Previously Presented) The structure of claim 1 further comprising at least one lead connected to the substrate.
5. (Previously Presented) The structure of claim 1 further comprising at least one solder pad connected to the substrate.
6. (Previously Presented) The structure of claim 1 further comprising at least one terminated wire connected to the substrate.
7. (Previously Presented) The structure of claim 1 wherein a bond disposed between the at least one copper layer and the core is a direct copper bond.
8. (Previously Presented) The structure of claim 1 wherein a bond disposed between the at least one copper layer and the core is an active metal braze.

9. (Previously Presented) The structure of claim 1 wherein the at least one copper layer has a thickness between 4 mils and about 24 mils.
10. (Original) The structure of claim 1 wherein the substrate is a first substrate, the structure further comprising a second substrate disposed between the semiconductor light emitting device and the first substrate.
11. (Original) The structure of claim 10 wherein the second substrate comprises at least one metal bonding pad and an insulating layer.
12. (Previously Presented) The structure of claim 11 wherein the insulating layer comprises one of AlN, Al₂O₃, and silicon nitride.
13. (Original) The structure of claim 10 wherein the second substrate comprises a silicon integrated circuit.
14. (Original) The structure of claim 1 further comprising a base connected to the substrate.
15. (Original) The structure of claim 1 further comprising a lens disposed over the semiconductor light emitting device.
16. (Previously Presented) The structure of claim 1 wherein the at least one copper layer is bonded to the core.
17. (Previously Presented) The structure of claim 1 wherein the at least one copper layer is bonded to the core by a process comprising:
- forming an oxide coating on a sheet of copper;
 - placing the oxide coating adjacent to the core; and
 - heating the oxide coating to form a eutectic melt.
- 18-23. (Canceled)
24. (Previously Presented) The structure of claim 1 wherein the at least one copper layer is in direct contact with the ceramic core.

25. (Previously Presented) The structure of claim 1 wherein the semiconductor light emitting device is configured to operate at a current density of at least 50 A/cm^2 .
26. (Previously Presented) The structure of claim 1 wherein the semiconductor light emitting device is configured to operate at an electrical power consumption of at least 1 W.
27. (New) The structure of claim 1 wherein the substrate is configured to operate at a temperature up to 800° C .